

AMENDMENTS TO THE CLAIMS

1. (Original) A memory cell comprising:

a first electrode deposited on a substrate body;

a second electrode, where the first electrode and the second electrode provide access to the memory cell;

a first layer of a silver chalcogenide disposed between the first electrode and the second electrode, where the first layer forms a first portion of a memory cell body; and

a second layer of a chalcogenide glass that forms a second portion of the memory cell body, where the second layer is also disposed between the first electrode and the second electrode, where the chalcogenide glass permits a conductive pathway to form between the first electrode and the second electrode in response to an electric potential applied between the first electrode and the second electrode.

2. (Original) The memory cell as defined in Claim 1, wherein the first layer of the silver chalcogenide is formed directly on the first electrode.

3. (Original) The memory cell as defined in Claim 1, wherein the second layer of the chalcogenide glass is formed directly on the first electrode.

4. (Original) The memory cell as defined in Claim 1, wherein the silver chalcogenide comprises silver selenide.

5. (Original) The memory cell as defined in Claim 1, wherein the silver chalcogenide comprises silver sulfide.

6. (Original) The memory cell as defined in Claim 1, wherein the silver chalcogenide comprises silver telluride.

7. (Original) The memory cell as defined in Claim 1, wherein the silver chalcogenide comprises silver oxide.

8. (Original) The memory cell as defined in Claim 1, wherein the chalcogenide glass comprises germanium selenide ($\text{Ge}_x\text{Se}_{(1-x)}$).

9. (Original) The memory cell as defined in Claim 1, wherein the chalcogenide glass comprises arsenic selenide (As_xSe_y).

10. (Original) The memory cell as defined in Claim 1, wherein the chalcogenide glass comprises germanium sulfide ($\text{Ge}_x\text{S}_{(1-x)}$).

11. (Original) The memory cell as defined in Claim 1, wherein the chalcogenide glass is selected from the group of chalcogenide glasses that comprise selenium, can be doped with silver, and can remain an amorphous material after the doping with silver.

12. (Original) The memory cell as defined in Claim 1, further comprising a third layer of a silver (Ag) that forms a third portion of the memory cell body, where the third layer is also disposed between the first electrode and the second electrode, where the first layer, the second layer, and the third layer are arranged such that the second layer of chalcogenide glass is disposed between the first layer of the silver chalcogenide and the third layer of silver (Ag).

13. (Original) The memory cell as defined in Claim 1, wherein at least one of the first electrode and the second electrode comprises tungsten (W).

14-27. (Cancelled)

28. (Original) A deposition process of fabricating at least a portion of an integrated circuit, the process comprising:

forming a bottom electrode in contact with a conductive region in a semiconductor base material;

forming a layer of a chalcogenide glass;

forming a layer of a silver chalcogenide, where the layer of the chalcogenide glass and the layer of the silver chalcogenide are adjacent to each other and form an active layer that is capable of supporting the formation of a conductive pathway in the presence of an electric field; and

forming a top electrode layer such that the layer of the chalcogenide glass and the layer of the silver chalcogenide are disposed between the top electrode layer and the bottom electrode layer, where an electric potential applied between the top electrode layer and the bottom electrode layer generates the electric field in the active layer.

29. (Original) The process as defined in Claim 28, wherein the layer of chalcogenide glass is germanium selenide ($\text{Ge}_x\text{Se}_{(1-x)}$), and where the process forms the layer of chalcogenide glass to a thickness within a range of about 200 Angstroms (\AA) to about 1000 \AA .

30. (Original) The process as defined in Claim 28, wherein the chalcogenide glass comprises germanium selenide ($\text{Ge}_x\text{Se}_{(1-x)}$).

31. (Original) The process as defined in Claim 28, wherein the chalcogenide glass comprises arsenic selenide (As_2Se_3).

32. (Original) The process as defined in Claim 28, wherein the chalcogenide glass comprises germanium sulfide ($\text{Ge}_x\text{S}_{(1-x)}$).

33. (Original) The process as defined in Claim 28, wherein the silver chalcogenide comprises silver selenide.

34. (Original) The process as defined in Claim 28, wherein the silver chalcogenide comprises silver sulfide.

35. (Original) The process as defined in Claim 28, wherein the silver chalcogenide comprises silver telluride.

36. (Original) The process as defined in Claim 28, wherein the silver chalcogenide comprises silver oxide.

37. (Original) The process as defined in Claim 28, wherein the process forms the layer of the chalcogenide glass and the layer of silver chalcogenide by evaporative deposition.

38. (Original) The process as defined in Claim 28, wherein the process forms the layer of the chalcogenide glass and the layer of silver chalcogenide by sputtering deposition.

39-45. (Cancelled)